

INSTRUCTION BOOK

COST CUTTER
SAWS

C. B. NELSON & COMPANY

DESIGNERS AND MANUFACTURERS

720 S. DEARBORN STREET • CHICAGO, ILLINOIS



FOREWORD

The purpose of this booklet is to supply users of COST CUTTER SAWS with simple, plain, understandable instructions concerning their care and operation. It is assumed those purchasing a saw-trimmer understand the uses to which it can be put; such as sawing and trimming slugs, rule and border, mitering, cut sawing and mortising. In view of this, no attempt has been made to go into these operations at length, but rather to instruct in the general care and operation of the machines.

So far as space permits, all important details of COST CUTTER SAWS are explained, necessary adjustments treated and methods for taking up play and wear are shown. If anything is not clear, or any other special information is desired, the manufacturers will gladly supply it.

While a saw-trimmer is relatively a simple machine it must be built and adjusted to high mechanical standards. Skilled workmen, competent supervision, approved machinery, and good shop practice guarantee correctness of manufacture of COST CUTTER SAWS, but after the machines leave our factory their adjustment is in the hands of users. Thus, those purchasing a saw-trimmer should realize that final results are dependent on those operating them.

While it is customary for several to have access to and use a saw-trimmer, it is usually best to make some single individual responsible for its adjustment, lubrication and general care. It is for this individual a booklet of this kind is primarily intended.

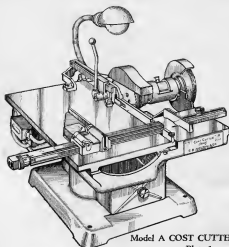
The instructions contained in this booklet cover the Models A, B, and C COST CUTTER SAWS. Unless otherwise stated they apply to all models. The general construction of the Models A, B, and C COST CUTTER SAWS conforms to the same high grade mechanical standards, the only difference being that the Model A does not have the saw elevating features of the Models B or C.

COST CUTTER SAWS are the last word in saw-trimmer design and construction. They embody all worth-while saw-trimmer improvements to be found in other machines as well as numerous special features of their own. Used on work for which they are intended, no saw-trimmers ever designed are more simple, rapid, accurate, or safe, and none will do their work better or quicker. If the instructions given in this booklet are intelligently carried out, success is assured, and the COST CUTTER SAW will be found a highly accurate and profitable printing office tool.

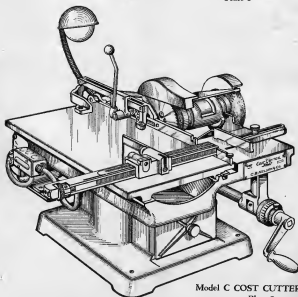
All COST CUTTER SAWS are correctly adjusted in all their parts and tested under power before leaving the factory. So far as humanly possible they are right. The manufacturers are proud of their product and are ever ready and willing to stand behind machines and users to the best of their ability.

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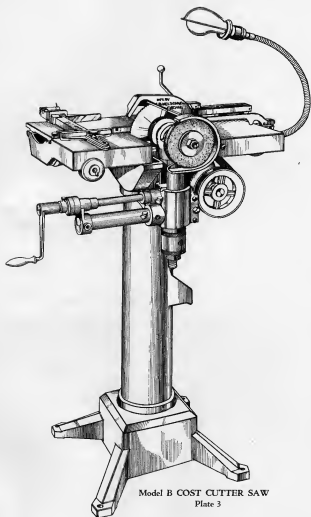
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Model A COST CUTTER SAW
Plate 1



Model C COST CUTTER SAW
Plate 2



SAFETY FIRST

Remember, saw-trimmers are designed to, and will, cut anything coming in contact with the fast revolving Saw Blade. Keep the Saw Guard down and the fingers clear of Blade when the saw is in operation. Turn off the power when the machine is not in use. **Safety first. Always, safety first.**

KEEP SAW BLADE SHARP

This applies to all types of Saw Blades. As different Blades, for different work, require different sharpening treatment; as filing, grinding, swaging and setting, it is usually best to send them to experienced saw sharpeners, who are to be found in all larger cities. **C. B. Nelson & Company, 720 South Dearborn Street, Chicago, Illinois**, designer and manufacturer of **COST CUTTER SAWS**, correctly sharpen all types of Saw Blades. The usual charge is 75c per Blade.

KEEP TRIMMER KNIVES SHARP AND PROPERLY SET

See instructions for sharpening and setting Trimmer Knives on pages 11, 12, and 13 of this booklet. Trimmer Knives may be sent to experienced saw sharpeners, though this is hardly necessary with the Trimmer Knife Grinding Attachment, supplied with all **COST CUTTER SAWS**.

KEEP THE COST CUTTER SAW PROPERLY OILED

Use a good grade of Machine Oil in the Oil Cups.

Use a good light oil—as 3-in-1—or Penetrating Oil—on V-Tracks.

Use good grade of Motor Oil, or Machine Oil, in Motor Oil Wick Cups. Oil machine frequently depending on use.

KEEP DRIVING BELT AT PROPER TENSION

The tension of the V-Driving Belt should be approximately the same as when the **COST CUTTER SAW** is received from the factory. Due to the construction of the Driving Belt, little adjustment is necessary, but when it is, tighten by following instructions on page 15. Keep belt free from grease or oil.

SPECIAL BLADES FOR SPECIAL WORK

The Universal Saw Blades, furnished regularly with **COST CUTTER SAWS**, are designed for all around printing office sawing, such as Leads, Slugs, Type, Borders, Electrotypes, occasional Stereotypes, mounted and unmounted Plates and Furniture. For heavy duty sawing of Stereotypes, Brass, Copper, Zinc and Wood special blades are provided which must be used for best results. These Special Blades will be found listed on page 17 of this booklet.

THE COST CUTTER SAW IS A PRECISION TOOL

Treat it as such. Don't use strong arm methods. Make all adjustments carefully. Don't try and force work through the machine. Jamming work suddenly forward on the Saw Table clogs the Blade and retards production. Keep the machine clean and free from dirt, rust and grease. A precision tool requires intelligent handling for accurate results.

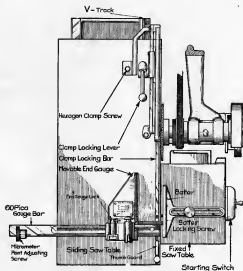


Table Arrangement of Model A COST CUTTER SAW

Plate 4

SLIDING SAW TABLE

1. Carrying Gauge Bar and End Gauge and Work Holding Clamp. For forwarding work to the Saw Blade. The operation of this Table is largely self-explanatory. For easy movement keep the V-Tracks clean and oiled with a light oil, such as 3-in-1 or penetrating oil.

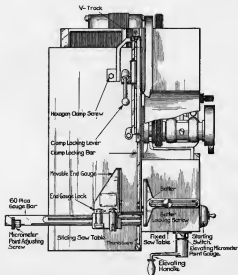


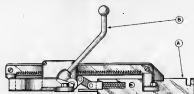
Table Arrangement of Model B and C COST CUTTER SAW

Plate 5

ELEVATING MECHANISM

2. The operation of the Elevating Mechanism is largely self-explanatory. By turning the Elevating Handle the entire Saw, Motor and parts connected thereto, are made to rise or fall while the Saw Table proper remains at a given height.
3. The Elevating Mechanism on the Model B Saw is controlled by a screw inside a large plunger. This screw is threaded to picas and one complete turn of the Elevating Handle causes the saw to elevate or lower 1 Pica.
4. The Elevating Mechanism on the Model C is controlled by a screw inside a cam block and one complete turn of the Elevating Handle causes the saw to elevate or lower 36 points.
5. In both models points are shown on the Elevating Point Gauge, which is in the form of a movable collar at the rear of the Elevating Handle and can be set as desired.
6. **IMPORTANT**—when elevating Saw Arbor to trimming position, or when Saw Arbor reaches highest point, always relieve strain of Elevating Screw by reversing upward movement about $\frac{1}{4}$ turn of Elevating Handle.

WORK HOLDING CLAMP



Auto-Clamp Work Holder

Plate 6

7. Located on extreme right of the Sliding Table. It serves the very important purpose of firmly clamping the work to be sawed. The ordinary position of the Work Holding Clamp is as shown on the drawings. It can be removed entirely from the Saw Table.
8. To operate the Work Holding Clamp:
 - (1) Slide bar "A" in slot on table, by means of handle "B," as far forward as it will go, and lock by downward pressure on handle "B."
 - (2) To UNLOCK reverse procedure.

AUXILIARY TABLE

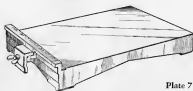
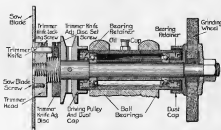


Plate 7

9. The Auxiliary Table, used on Model A Saw only, serves the purpose of lifting work above the Trimmer Knives in cut sawing, and in a measure answers the purpose of the Elevating Mechanism of the Model B and C COST CUTTER SAW. To place in position on the machine, remove the Work Holding Clamp, place on the sliding Saw Table with the right hand feet in the slot in which the Clamp Bar "A" rides and clamp to the Pica Gauge Bar by the clamp provided on the table's front.
10. For undercutting build up the Table with cardboard, or other material, to the desired height.
11. In placing the Auxiliary Table in position be careful not to mar or damage the Sliding Saw Table.

SAW ARBOR



Saw Head or Arbor—Model A, B and C COST CUTTER SAWS

Plate 8

12. The Saw Arbor, carrying the Saw Blade, Trimmer Head, Driving Pulley, Ball Bearings, Grinding Wheel, and component parts, is fully illustrated in the above drawing. The entire Saw Arbor is so designed that it can be moved as a unit, by loosening the two screws holding it in position, though this should rarely, if ever, be done.
13. Late model COST CUTTER SAWS are equipped with New Departure Double Sealed Bearings which never require oiling or other attention. For previous model machines Arbor oiling is necessary. For this we suggest that the contents of a small tube of **UNCARBOLATED AND UNBO-RATED VASELINE** be squeezed through the oil cup provided.
14. If in time, wear should occur in the Ball Bearings furnished with previous machines, they can be taken up by removing the Grinding Wheel and Dust Cap and taking up on the Bearing Retainer, with the Spanner Wrench. Tighten the Bearing Retainer just enough to prevent end play in Saw Arbor, and still retain free running of Shaft. To check, throw off V-Belt and spin Saw Arbor by hand. If too tight, back up Bearing Retainer slightly.
15. Always tighten Set Screw holding Bearing Retainer after adjusting.
16. In the later model machines, equipped with New Departure Double Sealed Ball Bearings, no adjustment is necessary.

SAW BLADE AND TRIMMER HEAD

17. To remove Saw Blade and Trimmer Head as one piece.
 - (1) Move Sliding Saw Table to rear and out of way.
 - (2) Throw off V-Belt and insert Pin Wrench in hole in Driving Pulley, to keep from turning, and unscrew Head from Saw Arbor in right hand direction. See plate 10, page 12.
18. To remove Saw Blade from Trimmer Head.
 - (1) Move Sliding Saw Table to rear and out of way.
 - (2) Unscrew the three Saw Blade Screws.
19. Reverse the above process to put new Blade or Head on machine.
20. In placing a new Blade on the Trimmer Head, tighten the Saw Blade Screws one at a time, gradually working from one to the other. This serves to bring the Blade in proper position and cause it to align properly.

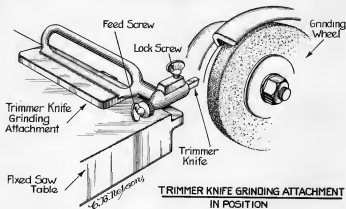
TRIMMER KNIVES

21. The Trimmer Knives are carried in the Trimmer Head as shown in the drawing on page 12. These Knives are placed in Sockets in the Head, by turning their flat face so Locking Screws bear on them, seating against the Trimmer Knife Adjusting Disc, and locking with the Key Wrench provided. They are removed by reversing the procedure. **In adjusting Trimmer Knives be sure they are firmly locked before starting the Saw.**

TRACKS

22. The V-Tracks on the Models A, B, and C COST CUTTER SAWS are held in position by screws under them. They can be "shimmed-up" should wear ever occur. The Tracks should be kept well oiled with a light oil such as 3-in-1. They should be cleaned occasionally with kerosene to remove the dirt and grit.

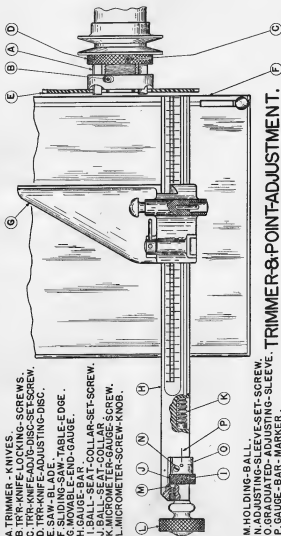
GRINDING TRIMMER KNIVES



Trimmer Knife Grinding

Plate 9

23. Instructions relating to "Setting Trimmer Knives" as listed on page 13 contemplate the Knives being of equal length. To bring this about a Trimmer Knife Grinding Attachment is supplied with all COST CUTTER SAWS. To grind Knives correctly and accurately by means of this Attachment, proceed as follows:
- (1) Put Trimmer Knife in Trimmer Grinding Attachment, flat side up to Lock Screw and tighten Lock Screw to hold in place.
 - (2) Place Grinding Attachment in position on Fixed Saw Table, flange over Table edge, Knife to Grinding Wheel.
 - (3) Turn on power.
 - (4) Now feed the Trimmer Knife forward to the running Grinding Wheel, by means of the Feed Screw back of the Knurled Lock Screw, meanwhile sliding the Grinding Attachment backward and forward against the Saw Table until the Knife is properly ground.
 - (5) After grinding properly set the Knurled Lock Screw tight, to preserve the adjustment, replace the ground Knife with another and grind all other Knives to the same adjustment and in the same manner.
24. If the above operation is carried out carefully all Trimmer Knives will be properly ground and of equal length. They are then readily set to trim correctly as shown on page 13.



TRIMMER-8-POINT-ADJUSTMENT.

ADJUSTING TRIMMER KNIVES

25. It is highly important that for best results the Trimmer Knives be correctly set as follows.
 - (1) Loosen all three Trimmer Knife Locking Screws "B" with Key Wrench.
 - (2) Loosen the Trimmer Knife Adjusting Disc Set Screw "C."
 - (3) Push Trimmer Knife "A" back against the Trimmer Knife Adjusting Disc "D" and tighten the Trimmer Knife Locking Screws "B" slightly to hold knives in position.
 - (4) Turn Trimmer Knife Adjusting Disc "D" in a right hand direction, thus forwarding the three Trimmer Knives so that they protrude $\frac{1}{2}$ point minimum to 1 point maximum beyond the cutting edge of the Saw Blade "E."
 - (5) Make certain that Trimmer Knives clear the Sliding Saw Table edge "F."
 - (6) Take a piece of Metal Furniture, or Brass Rule, of accurate known length, and set End Gauge "G" to correspond with it. (For example, if Furniture or Rule is 20 picas, End Gauge should be set to 20 picas.) Then advance Sliding Table so that Furniture or Rule comes into Trimming position.
 - (7) Revolve the Saw by hand to see that all three Knives contact properly. When they do, tighten Set Screw "C" in Adjusting Disc "D" firmly enough to hold, but not too tightly which will mar threads.
 - (8) Tighten the three Trimmer Knife Locking Screws "B."
26. If the above instructions are correctly and carefully carried out, the Trimmer Knives will be properly set. If it is found, however, by testing that the trimmed slug is a few thousands long or short, this is corrected by adjusting the Point Adjustment.

POINT ADJUSTMENT

- (1) Loosen Set Screw "I" in the Knurled Ball Seat Collar "J" with key wrench.
- (2) Turn Micrometer Gauge Screw "K" by means of the Screw Knob "L" slightly forward or back to correct the inaccuracy.
- (3) Be certain that the Holding Ball "M" seats properly in Ball Seat Collar "J."
- (4) Tighten Set Screw "I."
- (5) Loosen Set Screw "N" in the Graduated Adjusting Sleeve "O" and turn backward or forward so that the 0 mark on it lines up with the marker "P" on the Gauge Bar, and tighten Set Screw.

MITERING

27. Mitering is accomplished on COST CUTTER SAWS by means of a Mitering Attachment furnished with machines. Mitering Attachments are designed for right angle (90 degree) mitering only, as practically all mitering is of this kind. If necessary, however, special attachments can be had for other angles. See page 18 for prices.

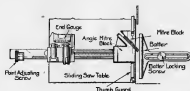


Plate 11

28. To miter rule or slugs, proceed as follows:

- (1) Cut rule to desired length.
- (2) Advance End Gauge approximately two-thirds of the rule's thickness, by means of the Point Adjusting Screw, or the following rough scale from which any measure can be computed:

For 6 Point advance End Gauge 4 Points.

" 7 "	" "	" "	" "	" 5 "
" 8 "	" "	" "	" "	" 5 1/2 "
" 9 "	" "	" "	" "	" 6 "
" 10 "	" "	" "	" "	" 7 "
" 11 "	" "	" "	" "	" 7 1/2 "
" 12 "	" "	" "	" "	" 8 "

- (3) Place the Batter in position, shown on illustration, run up to rule which has been advanced as above and tighten Batter Locking Screw.
- (4) Move End Gauge out of way and place Mitering Attachments in position as shown on plate.
- (5) Insert rule in Mitering Blocks, pushing rule well up to Batter, **which is now the guide**, and lock.
- (6) Start the Saw and miter. A 45 degree cut will be taken off the end of each rule sawed which when "buted" to another rule so mitered will make a right angle joint of 90 degrees.
- (7) Reverse rules to make the completed "box."

SAWING AND TRIMMING POSITION

29. **Model A**—The relation of the Saw Blade and Trimmer Knives to work on the Sliding Saw Table, or Auxiliary Table, if the machine is equipped with one, is fixed, and no attention need be paid to the matter.

Model B—In sawing and trimming, best results are had by keeping the
and Saw Head at the highest point. Bring to this point by means

Model C of the Elevating Handle. In cut or wood sawing the Trimmer Knives are not used and the Saw Head should be dropped until the Trimmer Knives clear the work.

BELT TIGHTENING

30. The V-driving Belt on COST CUTTER SAWS should be kept at approximately the same tension as when machines are received from the factory. To tighten proceed as follows:

Model A and Model C—Take up on Adjusting Screw at Motor Bracket until Belt is of correct tension.

Model B—Screw down Lower Movable Adjusting Collar, located at the base of the Plunger, until Belt is of correct tension. Screw down Upper Movable Adjusting Collar until it stops.

31. **DO NOT PLACE TOO MUCH TENSION ON BELT; TO DO SO WILL CAUSE MOTOR STRAIN WHICH WILL TEND TO BURN IT OUT.**

ELECTRICAL MOTORS

32. Only high-grade motors of reputable manufacturers are supplied with COST CUTTER SAWS. These motors should be kept well oiled. Use a good grade of Motor Oil or heavy Machine Oil in the Motor Oil Wick Cups, of which there are two, one located on each side of the Motor.
33. If any motor trouble develops, it is usually quicker and better to call in your local electrician—or the representative of the Motor manufacturer in the larger cities—and have him correct the difficulty, than to try and straighten out the matter by correspondence. All motors used on COST CUTTER SAWS bear the standard guarantee of the manufacturer.

ELECTRICAL WIRING

34. In some localities factory inspection demands certain special methods of wiring machinery to electrical lines. These demands must generally be complied with. All COST CUTTER SAWS are supplied with Wiring Cords to carry current to them and can ordinarily be plugged into light or power circuits, as they come from the factory. If metal conduits or other special forms of wiring are demanded, the local electrician should be employed to do the work.

STANDARD
EQUIPMENTA. 6" UNIVERSAL-SAW-BLADE,
TRIMMER HEAD & TRIMMER
KNIVES, COMPLETE.

B. 6" UNIVERSAL-SAW-BLADE.

C. GRINDING WHEEL.

D. TRIMMER-KNIFE-GRINDING-
ATTACHMENT.

E. KEY-WRENCH.

F. PIN-WRENCH.

G. BRUSH.

H. SPANNER-WRENCH.

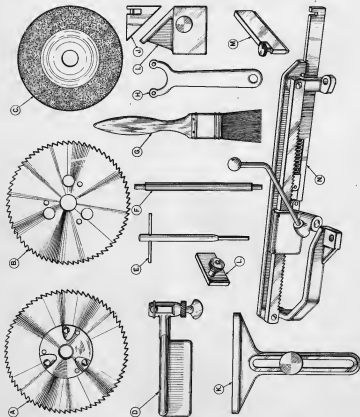
I. ANGLE-MITER-BLOCK.

J. UPPER-MITER-BLOCK.

K. BATTER & LOCKING-SCREW.

L. SHORT-LINE-ATTACHMENT.

M. THUMB-GUARD.

N. WORK-HOLDING-CLAMP
COMPLETE.

COST CUTTER SAW EQUIPMENT

COST CUTTER SAWS carry the equipment listed below when they come from the factory. This equipment serves a very definite purpose and should be kept with the machine.

- ✓ Saw Guard.
- ✓ Grinding Wheel Guard.
- ✓ Motor with Adjustable Bracket and V-Belt.
- ✓ Flexible Lighting Fixture.
- ✓ Electric wiring, Starting Switch and Cord.
- ✓ 6" Standard Saw Blade, with Trimmer Head and 3 Trimmer Knives.
- ✓ 6" Standard Saw Blade—Extra.
- ✓ 5" Grinding Wheel.
- ✓ Work Holding Clamp.
- ✓ Trimmer Grinding Attachment, complete.
- ✓ 12 Pica Gauge Bar—60 Pica Bar on older machines.
- ✓ Movable End Gauge.
- Short Line Holder
- Set of 2 Mitering Blocks.
- Batter and Locking Screw.
- ✓ Spanner Wrench.
- ✓ Pin Wrench.
- ✓ Key Wrench.
- Thumb Guard.
- ✓ Brush.

SAW BLADES AND TRIMMER HEADS

Prices Subject to Change Without Notice

UNIVERSAL AND STEREOTYPE SAW BLADES AND TRIMMER HEADS

- 6" Universal Saw Blade, Trimmer Head with Knives, complete.....
- 6" Universal Saw Blade with Screws.....
- 6" Stereotype Saw Blade, Trimmer Head with Knives, complete.....
- 6" Stereotype Saw Blade, with Screws.....
- Trimmer Head with Knives, for above, complete.....
- Trimmer Knife Locking Screws, set of three.....
- Saw Blade Locking Screws, set of three.....
- Trimmer Knives, each.....

BRASS SAW BLADES AND TRIMMER HEADS

- 5" 6 point Brass Saw Blade, Trimmer Head with Knives, complete.....
- 5" 6 point Brass Saw Blade with Screws.....
- 5" 4 point Brass Saw Blade, Trimmer Head with Knives, complete.....
- 5" 4 point Brass Saw Blade with Screws.....
- Brass Saw Trimmer Head with Knives, complete.....
- Trimmer Knives, for above, each.....
- Trimmer Knife Locking Screws, set of three.....
- Brass Saw Blade Set Screws, set of three.....

WOOD SAW BLADES WITH PLAIN HEADS

- 6" Wood Saw Blade with plain Head, complete.....
 6" Wood Saw Blade with Screws.....
 Plain Wood Saw Head.....
 Wood Saw Blade Set Screws, set of three.....

SPECIAL SAW BLADES

- 6" Special High Speed Steel Saw Blade.....
 This Blade is not swaged. It will run several times as long as the ordinary Blade without sharpening owing to the very high grade of the steel from which it is made. It cannot be filed, but must be ground.

OTHER SPECIAL BLADES

Special Saw Blades for cutting Zinc, Copper and other metals or materials can be furnished promptly on request. If you have special cutting requirements write for prices.

BEVELING HEADS

- Special beveling heads for beveling any one angle on a plate.....

GRINDING WHEELS

- 5" Grinding Wheel
 Diamond Grinding Wheel Dresser, for truing up Grinding Wheels

MITERING ATTACHMENTS

Right Angle Mitering Attachments only are furnished as regular equipment with all COST CUTTER SAWS.

- Mitering Attachment, complete.....
 Upper Miter Block for Work Holding Bar.....
 Angle Miter Block for Gauge Bar.....
 If special angles are required, blocks can be supplied. Write for prices.

MISCELLANEOUS SUPPLIES

- Work Holding Clamp, complete.....
 Graduated Pica Gauge Bar, 60 picas, complete.....
 Graduated Pica Gauge Bar, 72 Picas, complete.....
 Movable End Gauge, complete
 Extension Gauge 160 Picas.....
 Trimmer Knife Grinding Attachment, complete.....
 Lighting Fixture, complete
 Vulcanized V-Belt

Starting Switch for Models A or C.....	
Starting Switch for Model B.....	
Batter and Locking Screw	
Trimmer Screw Key Wrench.....	
Spanner Wrench	
Pin Wrench	
Crank Handle for Model B or C.....	
Short Line Holder	
Aluminum Saw Guard.....	
Glass Saw Guard.....	
Auxiliary Table for lifting work above Trimmer Knives, for Model A only	

GUARANTEE

COST CUTTER SAWS and attachments, manufactured by us, are guaranteed accurate and free from defective materials and workmanship at the time of shipment. Motors, Electrical Equipment, Saw Blades and Grinding Wheels, not manufactured by us bear the standard guarantee of their makers. C. B. Nelson & Company, Chicago, Illinois, will make good any defective material and workmanship entering into their products during one year from date of shipment, but assume no responsibility for inaccuracies due to incorrect adjustment, lack of proper lubrication, or the careless or improper handling of COST CUTTER SAWS

This booklet is intended for oversea users of COST CUTTER SAWS and to avoid confusion parts prices are not shown. Consult your COST CUTTER SAW dealer for quotations.